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EXAMINER	
ZERVIGON, RUDY	
ART UNIT	**PAPER NUMBER**
1763	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/820,634	SELVAMANICKAM ET AL.	
	Examiner	Art Unit	
	Rudy Zervigon	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-72* is/are pending in the application.

4a) Of the above claim(s) *69-72* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/26/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-68, drawn to an apparatus, classified in class 118, subclass 719.

II. Claims 69-72, drawn to a method for manufacturing a superconductor, classified in class 427, subclass 62.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process, for example, etching.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Antolin on August 24, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-68. Affirmation of this election must be made by applicant in replying to this Office action. Claims 69-72 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "36" has been used to designate both "shields" and "surface heaters". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "26" and "24" have both been used to designate "distributor". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "26" and "24" have both been used to designate "injector". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 44, 45, 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Claims 44, and 45 recite the limitation "tape-manufacturing system". There is insufficient antecedent basis for this limitation in the claim.

12. Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a

gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: Claim 47 requires both a "longitudinal flow distributor" and "a distributor". It is unclear if both elements are one in the same or if they are different elements. Clarification is required.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1-9, 11, 13, 16, 22, and 27-45 are rejected under 35 U.S.C. 102(a) as being anticipated by Fischer, Diego et al. (US 20030172873 A1). Fischer teaches a chemical vapor deposition (CVD) apparatus (Figure 2; [0040]-[0045] - PECVD, abstract) usable in the manufacture of superconducting conductor on an elongate substrate (7; Figure 2), the CVD apparatus comprising: a reactor (41; Figure 2); at least one substrate heater (49; Figure 2 - same designation as 410, section [0040]) ; and at least one precursor injector (412; Figure 2) having a longitudinal flow distributor (411; Figure 2), as claimed by claim 1. Applicant's claim limitations of "chemical vapor deposition (CVD) apparatus" and "in the manufacture of superconducting conductor" in the pending apparatus claims are intended use claim requirements. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably

distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Fischer further teaches:

i. The CVD apparatus according to Claim 1, wherein the at least one substrate heater (49; Figure 2 - same designation as 410, section [0040]) further includes at least one susceptor (48; Figure 2), as claimed by claim 2

ii. The CVD apparatus according to Claim 2, wherein the susceptor (48; Figure 2) has a radius of curvature for accommodating the elongate substrate (7; Figure 2), as claimed by claim 3

iii. The CVD apparatus according to Claim 1, wherein the substrate heater (49; Figure 2 - same designation as 410, section [0040]) is a multiple-zone heater, as claimed by claim 4

iv. The CVD apparatus according to Claim 4, further including a surface heater (410; Figure 2), as claimed by claim 5

v. The CVD apparatus according to Claim 5, wherein the surface heater (410; Figure 2) is positioned so as to maintain a temperature at the growth surface on the substrate (7; Figure 2) at a deposition temperature, as claimed by claim 6. Applicant's claim requirement of "as to maintain a temperature at the growth surface on the substrate at a deposition temperature" is an intended use claim requirement of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended

use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

vi. The CVD apparatus according to Claim 1, wherein the substrate heater (49; Figure 2 - same designation as 410, section [0040]) is a single-zone heater, as claimed by claim 7

vii. The CVD apparatus according to Claim 7, further including a surface heater (410; Figure 2), as claimed by claim 8

viii. The CVD apparatus according to Claim 8, wherein the surface heater (410; Figure 2) is positioned so as to maintain a temperature at a growth surface on the substrate (7; Figure 2) at a deposition temperature, as claimed by claim 9. Applicant's claim requirement of "as to maintain a temperature at the growth surface on the substrate at a deposition temperature" is an intended use claim requirement of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

ix. The CVD apparatus according to Claim 1, wherein the substrate heater (49; Figure 2 - same designation as 410, section [0040]) comprises at least one heat source (inherent), as claimed by claim 11

x. The CVD apparatus according to Claim 11, wherein the heat source is at least one resistance heating element ("heating elements"; [0022]), as claimed by claim 13

xi. The CVD apparatus according to Claim 1, further including a precursor supply system (19,19',19'',19'''; 18,18',18'',18'''; Figure 2), as claimed by claim 16

xii. The CVD apparatus according to Claim 16, further including a delivery mechanism (19,19',19'',19'''; 18,18',18'',18'''; Figure 2), as claimed by claim 22

xiii. The CVD apparatus according to Claim 1, further including an exhaust system (17; Figure 2), as claimed by claim 27

xiv. The CVD apparatus according to Claim 27, wherein the exhaust system (17; Figure 2) is for removing reaction products from the elongate substrate (7; Figure 2) surface, as claimed by claim 28. Applicant's claim requirement of "for removing reaction products from the elongate substrate" is an intended use claim requirement of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the

claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

xv. The CVD apparatus according to Claim 28, wherein the exhaust system (17; Figure 2) is a vacuum system, as claimed by claim 29

xvi. The CVD apparatus according to Claim 1, further including a gas supply (19,19',19'',19'''; 18,18',18'',18'''; Figure 2), as claimed by claim 30

xvii. The CVD apparatus according to Claim 30, further including a mass flow control mechanism (19,19',19'',19'''; Figure 2), as claimed by claim 31

xviii. The CVD apparatus according to Claim 30, further including a carrier fluid supplied to the precursor supply system (19,19',19'',19'''; 18,18',18'',18'''; Figure 2), as claimed by claim 32. Applicant's claim requirement of "carrier fluid" is an intended use claim requirement of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

xix. The CVD apparatus according to Claim 32, wherein the carrier fluid is an inert gas, as claimed by claim 33. Applicant's claim requirement of "carrier fluid is an inert gas" is an intended use claim requirement of the pending apparatus claims. Further, it has been held

that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

xx. The CVD apparatus according to Claim 33, wherein the inert gas is argon, as claimed by claim 34. Applicant's claim requirement of "the inert gas is argon" is an intended use claim requirement of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

xxi. The CVD apparatus according to Claim 30, wherein the gas is a reactive gas, as claimed by claim 35. Applicant's claim requirement of "the gas is a reactive gas" is an intended use claim requirement of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409;

MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

xxii. The CVD apparatus according to Claim 35, wherein the reactive gas is one of oxygen and nitrogen oxide, as claimed by claim 36. Applicant's claim requirement of "the reactive gas is one of oxygen and nitrogen oxide" is an intended use claim requirement of the pending apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

xxiii. The CVD apparatus according to Claim 1, further including a tape handler (30; Figure 2' [0022], [0026], [0029], [0035]), as claimed by claim 37

xxiv. The CVD apparatus according to Claim 37, wherein the tape handler (30; Figure 2' [0022], [0026], [0029], [0035]) comprises a tape translation mechanism (2,3,31,31,30; Figure 2), as claimed by claim 38

xxv. The CVD apparatus according to Claim 38, wherein the tape translation mechanism (2,3,31,31,30; Figure 2) comprises at least one of a conveyor (2,3,31,31,30; Figure 2), reel-to-reel unit, robotic translator, and combinations thereof, as claimed by claim 39

xxvi. The CVD apparatus according to Claim 1, further including at least one controller (30; Figure 2 [0022], [0026], [0029], [0035]) in communication with at least the substrate heater (49; Figure 2 - same designation as 410, section [0040]), as claimed by claim 40

xxvii. The CVD apparatus according to Claim 40, further including at least one sensor ("adjustable parameters"; [0026]) in communication with the at least one controller (30; Figure 2 [0022], [0026], [0029], [0035]), as claimed by claim 41

xxviii. The CVD apparatus according to Claim 41, wherein at least one sensor ("adjustable parameters"; [0026]) includes any one of a flow meter, a species monitor, a filament state monitor, a deposition sensor, a temperature sensor (c,d; [0026]), a pressure sensor (k; [0026]), a vacuum sensor ("adjustable parameters"; [0026]), a speed monitor (a,b; [0026]), and combinations thereof, as claimed by claim 42

xxix. The CVD apparatus according to Claim 40, wherein the at least one controller (30; Figure 2 [0022], [0026], [0029], [0035]) is for regulating the at least one precursor injector (412; Figure 2), as claimed by claim 43

xxx. The tape-manufacturing system according to Claim 40, wherein the at least one controller (30; Figure 2 [0022], [0026], [0029], [0035]) is for regulating the at least one precursor supply system (19,19',19'',19'''; 18,18',18'',18'''; Figure 2), as claimed by claim 44

xxxi. The tape-manufacturing system according to Claim 40, wherein the at least one controller (30; Figure 2 [0022], [0026], [0029], [0035]) regulates a translational speed (a,b; [0026]) of the elongate substrate (7; Figure 2), as claimed by claim 45

15. Claims 46-49, 54, 58, 60, 62, and 64-66 are rejected under 35 U.S.C. 102(b) as being anticipated by Ueki; Masao et al. (US 4,803,947 A). Ueki teaches:

i. A precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) usable in a reactor (206a-e; Figure 2) of a chemical vapor deposition (CVD) apparatus (Figure 2) in combination with a substrate heater (205a-e; Figure 2) and usable in the manufacture of superconducting conductor on an elongate substrate (207; Figure 2), the precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) comprising: a longitudinal flow distributor (upper baffle; Figure 7); and a transverse lateral flow restrictor (lower baffle; Figure 7), as claimed by claim 46

ii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 46, wherein the longitudinal flow distributor (upper baffle; Figure 7) includes an entrance (702; Figure 7), a receiver volume (first exit of 702; Figure 7), a distributor (top baffle; Figure 7), a distribution volume (volume below first baffle; Figure 7), and a plurality of exits (704; Figure 7), as claimed by claim 47

iii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 47, wherein the entrance (702; Figure 7) is a tube, as claimed by claim 48

iv. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 47, wherein the distributor (top baffle; Figure 7) is a perforated member, as claimed by claim 49

v. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 48, wherein there is an equal volume of perforations on both sides of the tube, and the tube is substantially in the center of the injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66), as claimed by claim 54

vi. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 47, further including vapor delivery (202a; Figure 2), as claimed by claim 58

vii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 46, further including a temperature regulation system (column 17; lines 49-56), as claimed by claim 60

viii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 60, wherein the temperature regulation system (column 17; lines 49-56) includes a heat source (205a-e; Figure 2), as claimed by claim 62

ix. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 46, wherein the lateral flow restrictor (lower baffle; Figure 7) is a physical extension of the precursor injector ("gas jetting portions";

Figure 7; upper and lower plenum of 702; column 15, lines 35-66), as claimed by claim 64

x. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 46, wherein the lateral flow restrictor (lower baffle; Figure 7) is a gas curtain emanating from the injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66), as claimed by claim 65

xi. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 46, wherein the lateral flow restrictor (lower baffle; Figure 7) is spaced relative to the substrate heater (205a-e; Figure 2) in a manner to permit exhausting of reaction products from the surface of the elongate substrate (207; Figure 2), as claimed by claim 66

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 10, 12, 14, 15, 24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer, Diego et al. (US 20030172873 A1) in view of Shimamura; Hideaki et al. (US 5,707,500 A). Fischer is discussed above. Fischer further teaches the CVD apparatus according to Claim 22, wherein the delivery mechanism comprises one of a mill and a conveyor (2,3,31,31,30; Figure 2) when the precursor source comprises a solid, as claimed by claim 24 – Applicant's

claim limitation of "when the precursor source comprises a solid" is a claim limitation of intended use. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Fischer does not teach:

i. The CVD apparatus according to Claim 8, wherein the surface heater (410; Figure 2) is a lamp, as claimed by claim 10

ii. The CVD apparatus according to Claim 11, wherein the heat source comprises a plurality of lamps, as claimed by claim 12

iii. The CVD apparatus according to Claim 1, further including a shield for protecting a low-temperature region of the substrate (7; Figure 2), as claimed by claim 14

iv. The CVD apparatus according to Claim 14, wherein the substrate (7; Figure 2) shield is positioned so that the surface temperature over the deposit coating does not exceed the deposition temperature, as claimed by claim 15 – Applicant's claim limitation of "so that the surface temperature over the deposit coating does not exceed the deposition temperature" is a claim limitation of intended use. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP

2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Shimamura teaches a lamp heater (25; Figure 8) and a shield (21; Figure 8) for CVD (column 6; lines 34-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Shimamura's lamp heater and shield to Fischer's apparatus.

Motivation to add Shimamura's lamp heater and shield to Fischer's apparatus if for imparting wafer temperature control as taught by Shimamura (column 15; line 54 – column 16; line 21).

18. Claims 67, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki; Masao et al. (US 4,803,947 A) in view of Shimamura; Hideaki et al. (US 5,707,500 A). Ueki is discussed above. Ueki does not teach:

i. chemical vapor deposition (CVD) apparatus (Figure 2) usable in the manufacture of superconducting conductor on an elongate substrate (207; Figure 2), the CVD apparatus comprising: a reactor (206a-e; Figure 2); at least one substrate heater (205a-e; Figure 2) ; and at least one precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) having a longitudinal flow distributor (upper baffle; Figure 7); and a transverse lateral flow restrictor (lower baffle; Figure 7) and a shield for protecting a low-temperature region of the substrate (7; Figure 2), as claimed by claim 67

ii. The CVD apparatus according to Claim 67, wherein the substrate (7; Figure 2) shield is positioned so that the surface temperature over deposit coating does not exceed the deposition temperature, as claimed by claim 68

Shimamura teaches a lamp heater (25; Figure 8) and a shield (21; Figure 8) for CVD (column 6; lines 34-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Shimamura's lamp heater and shield to Ueki's apparatus.

Motivation to add Shimamura's lamp heater and shield to Ueki's apparatus if for imparting wafer temperature control as taught by Shimamura (column 15; line 54 – column 16; line 21).

19. Claims 50-53, 55-57, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki; Masao et al. (US 4,803,947 A) in view of Chang; Mei et al. (US 4,854,263 A). Ueki is dicussed above. Ueki does not teach:

i. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 49, wherein the perforated member has a density of between about 1 to 10 holes per inch, as claimed by claim 50

ii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 47, wherein the distribution volume (volume below first baffle; Figure 7) is less than the receiver volume (first exit of 702; Figure 7), as claimed by claim 51

iii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 47, wherein the receiver volume (first exit of

702; Figure 7) is greater than a total volume of perforations in the perforated member, as claimed by claim 52

iv. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 47, wherein a total volume of the perforations is greater than the distribution volume (volume below first baffle; Figure 7), as claimed by claim 53

v. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 54, wherein the volume of perforations increases with an increasing direction from the tube, as claimed by claim 55

vi. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 55, wherein the volume of perforations is increased by increasing the diameter of the perforations, as claimed by claim 56

vii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 55, wherein the volume of perforations is increased by increasing the thickness of the perforated member, as claimed by claim 57

viii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 58, wherein a volume of the vapor delivery (202a; Figure 2) is greater than the receiver volume (first exit of 702; Figure 7), as claimed by claim 59

Chang teaches a gas distribution plate (30; Figure 4) and holes (31; Figure 4,5). Inclusive, Chang teaches optimized process gas hole distributions (column 5, line 60 – column 6, line 28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the relative dimensions of Ueki's process gas hole distributions and apparatus dimensions as taught by Chang.

Motivation to optimize the relative dimensions of Ueki's process gas hole distributions and apparatus dimensions is for more efficient use of deposition gases as taught by Chang (column 5, line 65 – column 6, line 2). Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art.(Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04)

20. Claims 17-21, 23, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer, Diego et al. (US 20030172873 A1) in view of Yuuki; Akimasa et al. (US 5,776,254 A). Fischer is discussed above. Fischer does not specifically teach a process gas "source", nor does Fischer teach the process gas identity as being:

i. The CVD apparatus according to Claim 17, wherein the precursor source is a solid, as claimed by claim 18

ii. The CVD apparatus according to Claim 18, wherein the solid precursor source is a powder, as claimed by claim 19

iii. The CVD apparatus according to Claim 17, wherein the precursor source is a liquid, as claimed by claim 20

iv. The CVD apparatus according to Claim 20, wherein the liquid is a solution of THS and THD, as claimed by claim 21

v. The CVD apparatus according to Claim 22, wherein the delivery mechanism comprises a pump when the precursor source comprises a liquid, as claimed by claim 23

vi. The precursor delivery system according to Claim 16, further including a vaporizer, as claimed by claim 25

vii. The CVD apparatus according to Claim 25, further including a carrier fluid supply, as claimed by claim 26

However, Applicant's apparatus claim requirements of process source state and/or identity does not further limit Applicant's apparatus claims. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

Yuuki teaches a CVD delivery mechanism comprising a pump (74; Figure 7), a vaporizer (4; Figure 7), and a carrier fluid supply (1; Figure 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Yuuki's delivery mechanism to Fischer's apparatus.

Motivation to add Yuuki's delivery mechanism to Fischer's apparatus is for improving deposited film properties by improving the process material delivery as taught by Yuuki (column 4, lines 60-67).

21. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki; Masao et al. (US 4,803,947 A) in view of Fischer, Diego et al. (US 20030172873 A1).

Ueki does not teach:

i. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 60, wherein the temperature regulator further includes a plurality of temperature sensors, as claimed by claim 61

Fischer is discussed above. Fischer teaches temperature sensors (c,d; [0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Fischer's temperture sensors to Ueki's temperature control.

Motivation to add Fischer's temperture sensors to Ueki's temperature control is for achieveing substrate temperature control as taught by Fischer ([0026]).

22. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki; Masao et al. (US 4,803,947 A) in view of Tanaka; Masato (US 4,924,800 A).

Ueki does not teach:

ii. The precursor injector ("gas jetting portions"; Figure 7; upper and lower plenum of 702; column 15, lines 35-66) according to Claim 60, wherein the temperature regulation system (column 17; lines 49-56) includes a cooler, as claimed by claim 63

Tanaka teaches a temperature regulation system (32, 33, 41, 43, 51, 52; Figure 7) includes a cooler (51, 52; Figure 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Tanaka's temperature regulation system to Ueki temperature control system.

Motivation to add Tanaka's temperature regulation system to Ueki temperature control system is for substrate temperature control as taught by Tanaka (column 4; lines 20-30).

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (703) 872-9306. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.

8/30/05